

Article Overview

Testing an optical module involves verifying link status, reading transceiver details, monitoring optical parameters, and confirming compatibility with the switch.

Step 1: Verify Switch and Module Recognition

First, ensure the switch recognizes the module and the interface is operational. Use the CLI to check the switch model and software version with:

CodeCopyshow version

Then confirm the interface status:

CodeCopyshow interface status

If the port shows "connected", the module is recognized; if it shows "notconnect", the issue may be with the fiber cable, remote device, or the SFP module itself .

Step 2: Identify the Installed Transceiver

Check which SFP module is installed and its vendor information:

CodeCopyshow inventoryshow idprom interface

These commands display the part number, serial number, and vendor, helping verify that the correct module is used and compatible with the switch .

Step 3: Read Optical Diagnostics (DDM/DOM)

For deeper testing, read real-time optical parameters:

CodeCopyshow interfaces transceiver detail

or

CodeCopyshow interface transceiver detail

Key parameters include:

- o Tx Power (dBm) - optical power transmitted
- o Rx Power (dBm) - optical power received
- o Temperature (?C) - module thermal status
- o Voltage (V) - electrical health

Optical Switch Module Testing

o Laser Bias Current (mA) - laser operation Compare these values with the module datasheet to ensure they are within normal ranges.

Step 4: Check for Compatibility and Errors

If the module is third-party or unsupported, the switch may disable the port. Commands like:

`CodeCopyno errdisable detect cause gbic-invalid`

can allow operation with compatible third-party modules, but always verify MSA compliance and DOM support .

Step 5: Optional Advanced Testing

For critical links or high-speed modules (10G+), additional tests can be performed:

- o Optical Power Measurement - using an optical power meter to verify Tx/Rx levels
- o Bit Error Rate Testing (BERT) - to detect transmission errors and jitter
- o Loopback Testing - using a loopback plug or second module to verify full-duplex operation
- o Eye Diagram Validation - for QSFP28 or PAM4 modules to check signal clarity and jitter

Step 6: Monitor Logs

After inserting the module, check the switch logs for recognition messages:

`CodeCopyshow logging`

Successful identification confirms the module is accepted and operating at the correct data rate; errors indicate incompatibility or hardware issues .

Summary

Testing an optical module involves:

- o Confirming interface status and switch recognition
 - o Identifying the installed transceiver and vendor
 - o Reading DDM/DOM optical parameters
 - o Verifying compatibility and resolving errors
 - o Performing optional advanced tests for high-speed links
 - o Monitoring switch logs for module acceptance
- Following these steps ensures the optical module is functioning correctly, the link is stable, and the switch operates within expected optical parameters .

Optical Switch Module Testing

Optical switches. Fast and reliable optical switches to streamline your test procedures. Can be customized with a wide range of

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Testing purpose: To determine whether the optical module can reliably establish and maintain connections after multiple plug-in and

Most switch brands have specific compatibility requirements, especially when using third-party optical modules. First

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